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New subspecies of *Pipreola riefferii* and *Chlorospingus ophthalmicus* from Peru by John P. O'Neill & Theodore A. Parker III

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Studies in Peru by members of the Louisiana State University Museum of Zoology and their associates have turned up a rather astounding number of new forms of birds. Series of the cotinga *Pipreola riefferii* from the Carpish and Sira Mountains of central Peru are quite distinct and we propose to call them

Pipreola riefferii tallmanorum subsp. nov.

Type: Adult male, collected on 5 August 1973 by Erika J. Tallman on the trail to Hacienda Paty below (NE) Carpish Pass, Department of Huánuco, Peru, elevation c. 2200 m, No. 74145, Louisiana State University Museum of Zoology. (Dan A. Tallman original number 1734.)

Description: The male differs from males of all other subspecies in its combination of small size, shiny black head and throat and nearly unmarked lemon yellow lower breast and belly. Females differ from females of all other subspecies in their small size, the slightly darker (more bluish) green upperparts, and the slightly more golden yellow of the underparts.

Measurement of type (mm): Wing (chord) 85.2, tail 68.6, tarsus 19.5, culmen from base 13.9.

Range: So far as known, the upper Subtropical and lower Temperate Zones of the eastern slope of the Cordillera Carpish and the Subtropical Zone of the Cerros de Sira, both in the Department of Huánuco, central Peru.

Specimens examined: *Pipreola r. riefferii* (7). Colombia: "Bogota," 1 ♂ subad. (AMNH); "Columbia," 2 ♂♂ (AMNH); Subia, 1 ♂ (AMNH); El Roble, 1 ♀ (AMNH); parte alta de Fusugasuga, 1 ♀ (AMNH); El Eden, 1 ♂ (AMNH).

P. r. occidentalis (4). Colombia: Ricaurte, 1 ♂ (LSUMZ); Cerro Munchique, 2 ♀♀ (LSUMZ); Moscopan, 1 ♂ (LSUMZ).

P. r. chachapoyas (incl. *confusa*) (33). Peru: ridge E (above) San José de Lourdes, 2 ♂♂, 2 ♀♀ (LSUMZ); 20 trail km E La Peca, 4 ♂♂, 1 ♀ (= ♂?), 2 ♀♀ (LSUMZ); 12 trail km E La Peca, 1 ♀ (LSUMZ); Cordillera Colán, 1 ♀ (LSUMZ); 33 rd. km NE Ingenio, 2 ♂♂ (LSUMZ); 10 rd. km NE Abra Patricia, 4 ♂♂, 3 ♀♀ (LSUMZ); Chachapoyas, 1 ♂ (AMNH); La Lejia, 1 ♂, 1 ♀ (AMNH); San Pedro, 2 ♂♂, 1 ♀ (AMNH); Cumpang, 5 ♂♂ (LSUMZ).

P. r. tallmanorum (23). Peru: Cerros del Sira, 6 ♂♂, 5 ♀♀ (AMNH); trail to Hda. Paty, 8 ♂♂, 4 ♀♀ (LSUMZ).

Remarks: We take great pleasure in naming this new form for Dan A. and Erika J. Tallman whose studies of Carpathian birds have added much to the knowledge of Peru's avifauna.

The new form is most like *P. r. riefferii* of Colombia and Venezuela in having the underparts lightly marked, but the 2 are quite different in size (5 male *P. r. riefferii* have an average wing length of 90.9 mm and a tail of 72.2 mm, while 14 male *P. r. tallmanorum* have wing and tail averages of 84.0 mm and 68.6 mm respectively).

P. r. tallmanorum is quite distinct from its nearest relative to the north, *P. r. chachapoyas*. There are no *Pipreola* specimens known from the area between eastern La Libertad and central Huánuco, but the populations from these 2 areas are different enough from each other for us strongly to suspect that their ranges are not continuous. Indeed, the differences are such that detailed field studies could prove it to merit specific status.

In examining all known forms of *Pipreola riefferii* we came to the conclusion that the relationship between *P. r. chachapoyas* and *P. r. confusa* is indeed most confusing. Among 27 recently collected specimens of both sexes from within the range of *P. r. confusa* south into the range of *P. r. chachapoyas*, the differences between the 2 are obscure. Birds from southern Ecuador and northern Peru (south-central Amazonas, northern San Martín) are heavily marked below and all have the black of the upper breast washed with mossy green. Birds from the mountains east of the Río Chiriaco in northern San Martín are the most heavily marked, but just west of there in the mountains on the other side of the Río Chiriaco in south-central Amazonas the birds are fairly typical of *P. r. chachapoyas*. These Amazonas birds are, in general, slightly more heavily marked than birds in the paratypic series from nearer to the city of Chachapoyas. In a series from the Cordillera Colán, on the south side of the Río Marañón in central Amazonas (5° 34' S, 78° 19' W), there is enough variation for us to be able to pick out males typical of both *P. r. confusa* and *P. r. chachapoyas*. Actually, specimens in the series collected near the town of Chachapoyas are the least marked of all north Peruvian birds, but as noted above they can be matched by birds from the Cordillera Colán. With the lack of differences between the 2 forms, we consider that birds from eastern Ecuador south at least to eastern La Libertad in Peru should all be considered under a single name, *P. r. chachapoyas*.

P. r. tallmanorum is uncommon in the Carpathian Mountains; it was noted daily in small numbers between 2130 m and 2280 m, usually in pairs or groups of 3-4 individuals, almost always in fruiting trees of the family Melastomataceae. The song, given by both sexes, consists of several soft, high-pitched notes followed by a very thin, high-pitched "seeee"; this series of notes may be written "ti-ti-ti-seeee" and is quite like that of *P. r. chachapoyas*, both north and south of the Río Marañón, as well as reminiscent of vocalizations of *P. intermedia*. The latter species was also found to occur in the Carpathian region, and it narrowly overlaps with *P. riefferii* there, but seems to be more prevalent at higher elevations (2280 m to 2430 m).

Snow (1973) questioned the sympatry of *P. riefferii* and *P. intermedia* in the Department of La Libertad. In 1979, LSUMZ personnel found these 2 species together there, occasionally feeding in the same fruiting melastomes,

at Cumpang, between 2280 m and 2430 m. We now know that the 2 occur together at least in La Libertad and Huánuco in the Eastern Cordillera of central Peru. *Pipreola arcuata* and *P. pulchra* also inhabit the cloud forests of the Carpath Mountains, occurring mainly higher and lower, respectively, than *P. riefferii*.

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In 1947 John T. Zimmer, writing about the bush tanager *Chlorospingus ophthalmicus*, stated that "there is, as stated on an earlier page, a wide hiatus in northern Peru where the species has not been found, while *phaeocephalus* [= *C. o. phaeocephalus*] of Ecuador appears to remain beyond the Peruvian boundary. It is probable that some representative of the species will be found in suitable terrain between the Junín region and the Ecuadorian frontier, but it has yet to be discovered. Considering the quantity of material that has been assembled at various times by different workers in the region it is surprising that a member of the group has not been discovered to date".

We too find it surprising that no specimen of *C. ophthalmicus* was collected in northern Peru until 1968, as the species seems to be as common there as it is elsewhere in Peru. We have 26 specimens from the Departments of Amazonas, La Libertad, San Martín, and Huánuco. This previous lack of material serves to further highlight the general paucity of detailed ornithological investigations at higher elevations on the eastern slopes of the Peruvian Andes. The 23 specimens from northern Peru, south of the Río Marañón, are recognizably different and we propose should be known as

***Chlorospingus ophthalmicus hiaticolus* subsp. nov.**

Type: Adult male, collected on 24 August 1976 by John P. O'Neill, 10 km (by road) below (NE) Abra Patricia on the road to Rioja, Departamento de San Martín, Peru, elevation c. 1890 m, No. 82222, Louisiana State University Museum of Zoology. (John P. O'Neill original number 5657.)

Description: Most like *C. o. peruvianus* of southern Peru, but differing from that form by averaging slightly larger and by having the yellow breast band duller (slightly greener). There is also a tendency for most specimens to have less dark speckling on the throat, whiter bellies, and a less pronounced dark ear patch than is present in *C. o. peruvianus*. Also somewhat like *C. o. phaeocephalus* of Ecuador and extreme northern Peru (6 recently collected, see specimens examined), but overall brighter, with paler, less speckled throat, whiter belly, and yellower (less olive) pectoral band.

Measurements of type (mm): Wing (chord) 72.9, tail 56.9, tarsus 23.0, culmen from base 14.9.

Range: So far as known, the upper Subtropical and lower Temperate Zones of the eastern Andes in the Departments of Amazonas (Cordillera Colán northeast of Bagua Chica), San Martín (mountains west of Rioja), La Libertad (Cumpang, on Tayabamba-Ongón trail), and Huánuco (Cordillera Carpath, northeast of Huánuco city), but probably occurring in suitable habitat from the Cordillera Colán in Amazonas south at least to the north side of the canyon of the Río Huallaga in Huánuco.

Specimens examined: *Chlorospingus semifuscus* (9). Colombia: Ricaurte, 2 ♀♀ (LSUMZ); Ricaurte, 1 ♀, 1 ♂ imm. (FMNH); Cerro Munchique, 2 ♂♂, 3 ♀♀ (FMNH).

C. o. phaeocephalus (5). Ecuador: El Chiral, 1 ♂, 2 ♀♀ (AMNH); Sumaco

arriba, ♂ (AMNH). Peru: Playón, 1 sex? (LSUMZ); Sapalache-Carmen trail, 5 ♀♀ (LSUMZ).

C. o. biaticolus (26). Peru: 20 trail km E La Peca, 5 ♀♀ (LSUMZ); 10 km NE Abra Patricia, 3 ♂♂, 2 ♀♀, 1 sex? (LSUMZ); Cumpang, 3 ♂♂, 5 ♀♀, 1 sex? (LSUMZ); Paty Trail, 2 ♂♂ (LSUMZ); E slope Cordillera Carpish [= Paty Trail], 2 ♂♂, 2 ♀♀ (LSUMZ).

C. o. cinereocephalus (11). Peru: Cerros del Sira, 4 ♂♂, 4 ♀♀ (AMNH); Chelpes, 1 ♂, 1 ♀ (AMNH); Estera Ruana, 1 ♂ (LSUMZ).

C. o. peruvianus (10). Peru: Hda. Cadena, 1 ♂, 1 ♀ (FMNH); La Oroya, 2 ♂♂ (ANSP); Oconeque, 1 ♂, 1 ♀ (ANSP); Bosque Aputinye, 1 ♂, 1 ♀ (LSUMZ); Santo Domingo (Inca Mine), 1 ♀ (ANSP); 5 km NE San José on Río Huari Huari, 1 ♀ (LSUMZ).

Remarks: The fact that the new form was not discovered until 1968 is most surprising. We can only surmise that earlier workers did not spend time at the elevations where *Chlorospingus ophthalmicus* occurs. We have named the new form *biaticolus*, meaning "gap inhabitator," to highlight the fact that the apparent hiatus in the range of the species is not real.

C. o. biaticolus is common throughout its known range, and is frequently noted in mixed-species flocks of other tanagers and honeycreepers that move from fruiting tree to tree in primary forest and in advanced second growth at the forest edge. These bush-tanagers also search for insects on leaves, and in epiphytic growth on branches in the forest canopy and subcanopy. Males establish territories at the forest edge and in forest openings (i.e. treefalls), where they sing from inconspicuous perches 10–20 m above ground. The primary song (see Fig. 1) consists of an accelerating series of chip notes followed by a harsh trill, and has been recorded from June to October, but the species may sing throughout the year. This bush-tanager is most vocal after dawn and late in the afternoon.

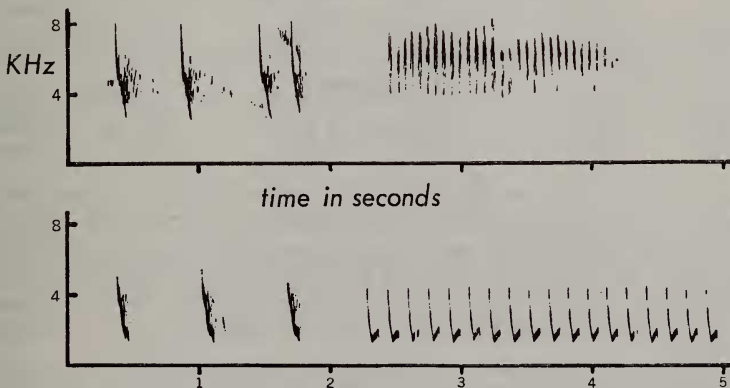


Fig. 1. Sonograms of a portion of the songs of *Chlorospingus ophthalmicus biaticolus* (upper) from near Abra Patricia, San Martín, Peru, and *C. o. cinereocephalus* (lower) from the Cerros del Sira, Huanuco, Peru. Both sonograms include only the last few notes of the series of chips, but show all notes in the trill.

We wanted to compare the voices of the various forms of *C. ophthalmicus* occurring in Peru, but the only tape-recordings available are those of *C. o. biaticolus* and *C. o. cinereocephalus*. Fig. 1 shows that the introductory chip

notes of the 2 forms are fairly similar, but the terminal trills (of at least these individuals) are quite different in rate, frequency and fine structure of the notes. Additionally, *C. o. hiaticolus* has a high-pitched component in its song that is apparently lacking in the song of *C. o. cinereocephalus*. Despite these differences, we feel that before a decision can be made about their specific status, more tape-recordings of and playback experimentation with these and the forms *C. o. phaeocephalus*, *C. o. peruvianus* and *C. semifuscus* are needed.

The new form is somewhat puzzling morphologically in that it does not drastically differ from *C. o. peruvianus* of southern Peru. However, the populations of the races to the north and south of it, *C. o. phaeocephalus* and *C. o. cinereocephalus* respectively, are distinctly different. *C. o. cinereocephalus*, which separates *hiaticolus* from *peruvianus*, is drastically different, having the yellow portion of its pattern replaced by pale buff. It is also the largest of the Peruvian races, especially in wing length (see Table 1). If *C. o. hiaticolus* were in contact with *C. o. peruvianus*, we would probably merge the 2 under one

TABLE I
Selected measurements (mm) of the four Peruvian races of *Chlorospingus ophthalmicus*

WING		TAIL		CULMEN FROM BASE	
males	females	males	females	males	females
<i>C. o. phaeocephalus</i>					
n=2	n=2	n=2	n=2	n=2	n=2
70.0-71.0	59.6-63.8	56.3-59.3	47.7-52.8	14.3-14.7	14.2-14.5
(70.5)	(61.7)	(57.8)	(50.3)	(14.5)	(14.3)
<i>C. o. hiaticolus</i>					
n=11	n=10	n=12	n=9	n=12	n=9
70.2-74.9	66.0-68.5	55.3-63.0	54.9-59.1	13.5-15.2	14.2-14.9
(72.1)	(66.6)	(60.0)	(56.7)	(14.7)	(14.5)
<i>C. o. cinereocephalus</i>					
n=7	n=4	n=6	n=4	n=7	n=4
69.5-74.9	65.9-71.0	60.0-64.0	55.5-60.0	13.0-15.9	13.5-15.5
(73.2)	(67.5)	(62.1)	(58.1)	(14.4)	(14.1)
<i>C. o. peruvianus</i>					
n=5	n=5	n=5	n=5	n=4	n=5
64.0-71.5	58.2-68.5	56.5-60.0	53.0-60.9	13.8-14.8	12.8-14.6
(67.1)	(64.4)	(59.0)	(57.0)	(14.4)	(14.0)

name, but since the 2 are separated by a distinctly different form, and are separable on morphological criteria, we feel that the north-Peruvian bird should be distinguished by name*. *C. o. phaeocephalus*, recently collected in Peru from the mountains east of Huancabamba, is apparently totally separated from the new form by the arid Marañón valley. There is no indication that gene flow presently takes place between any of the 4 Peruvian subspecies.

The specific status of *C. o. cinereocephalus* has always been questionable. It was originally described as a separate species, but was later made a subspecies of *C. semifuscus* (Hellmayr 1936), which it resembles in having the yellow ventral markings replaced by buff. It is, however, now again considered to be a subspecies of *C. ophthalmicus*.

* A series of 20 specimens of *C. o. peruvianus* collected in the Department of Puno, Peru by LSUMZ personnel after this paper went to press, show the colour differences between *peruvianus* and *hiaticolus* to be even more obvious than previously ascertained.

We attempted to gather data to determine the relationships of *C. o. cinereocephalus* to *C. semifuscus* and of both of them to the rest of the *C. ophthalmicus* complex, but not enough information exists to do so. We predict that *C. semifuscus* will be found to be restricted to the western Andes of Colombia and Ecuador and that in Ecuador it will be actually found only on the western slopes. The only place that *C. semifuscus* and *C. ophthalmicus* have been collected together is Gualea, on the west slope of the Western Andes in Ecuador, but there is some doubt as to the actual site where the *C. ophthalmicus* specimen was collected (Zimmer 1947).

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The morphology of Sardinian Warblers *Sylvia melanocephala* and Blackcaps *S. atricapilla* resident on Gibraltar

by J. C. Finlayson

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The Sardinian Warbler *Sylvia melanocephala* and the Blackcap *Sylvia atricapilla* are the main resident foliage-gleaning insectivores at Gibraltar. The Sardinian Warbler is common within its essentially circum-Mediterranean range (Vaurie 1959, Voous 1960), and is associated typically with Mediterranean scrub. The Blackcap is widespread in the Palaearctic, and is mostly associated with mature woodland rather than with maquis, even within the Mediterranean region (Cody & Walter 1976). At Gibraltar, the 2 species occupy maquis vegetation and are often in close contact.

During 1973-1979 Sardinian Warblers and Blackcaps were mist-netted in a 2-ha site in the maquis at Gibraltar. At least 10 visits were made to the site most months. Retraps were frequent at all times of year and this established that Sardinian Warblers were resident and that 2 Blackcap populations were involved, a resident one and a migratory one. Ringing recoveries suggest